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Naval Facilities Engineering Command, Mid-Atlantic

Safety Lessons Learned Mishap Abstract

MISHAP : Crane Lattice Boom Collapse
Injury: None
Damage: Crane, Pile Leads and Crane Boom
Estimated cost: over \$250,000
Type of Work: Driving Piles
Equipment: American Crawler Model 9260

DESCRIPTION OF THE MISHAP: Crane was in position with a 110 foot (12"by 12" concrete pile in the leads when a "pop" was heard. The leads dropped straight to the ground and the boom recoiled backwards and struck the boom stops. The leads followed overcoming the stops and fell directly over the centerline of the crane house. The operator jumped from his station and exited the rig. The 110 foot concrete pile fell independently to the right of the crane. No injuries to personnel occurred



DIRECT CAUSE: Contractor failed to use crane manufacturer OEM equipment when making modifications to crane boom. Contractor failed to have welded connection designed by a Registered Professional Engineer.

INDIRECT CAUSE: Contractor did not have proper in-house procedures to ensure all equipment repairs and/or modifications comply with OEM standards.

EM 385 VIOLATION: Section 16 CRANES AND HOISTING EQUIPMENT, 16.A.03 "The employer shall comply with all manufacturer's instructions, procedures and recommendations applicable to the operational functions of equipment, including its use with attachments". and 16.A.03.b. "Procedures related to the capacity of equipment must be developed and signed by a Registered Professional Engineer (RPE) familiar with the equipment".

OSHA VIOLATIONS: NONE

ROOT CAUSE: Contractor failed use required manufacturers OEM Head Box for connection of Pile leads to lattice boom.

LESSONS LEARNED:

1. Pile driving attachments must have OEM attachment documentation with the crane.
2. Current Crane Checklists need to be updated to reflect requirement to verify only OEM equipment is installed on all contractor cranes Special Note* Contract Safety Manager collaborating with Crane Surveillance and NAVFAC Safety Contract Safety personnel to ensure checklist are updated to include pile drive attachment points are using OEM
3. Safety Alert will be issued with crane attachment details.
- 4 Determine why current CNRMA crane instruction applies only to Hampton Roads AOR.